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EXAMINER	
ROBINSON BOYCE, AKIBA K	

ART UNIT	PAPER NUMBER
3628	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	**Application No.** 10/678,034	**Applicant(s)** NGUYEN ET AL.
	Examiner AKIBA K. ROBINSON BOYCE	**Art Unit** 3628

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 28 July 2010.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-5,7-9,62,64,65,68,70,72,76-78,80,81,83,87-90 and 95-98 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-5, 7-9, 62, 64, 65, 68, 70, 72, 76-78, 80, 81, 83, and 87-90 and 95-98 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1. Due to communications filed 7/28/10, the following is a final office action. Claims 68, 76, 77, are amended. Claims 6, 10-61, 63, 66-67, 69, 71, 73-75, 79, 82, 84-86, 91-94 are cancelled, and claim 98 has been added. Claims 1-5, 7-9, 62, 64, 65, 68, 70, 72, 76-78, 80, 81, 83, and 87-90 and 95-98 are pending in this application and have been examined on the merits. The previous rejection has been modified to reflect claim amendments.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-5, 7-9, 62, 64, 65, 68, 72, 76-78, 80, 83, 87-89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Irwin et al (US 2003/0187794 A1), and further in view of Durbin et al (US 4,970,658), and further in view of Mathew et al (US 2005/0172033 A1), and further in view of Kinoshita et al (US 2003/0055792 A1).

As per claims 1, 59, 63, 64, Irwin et al discloses:

a point of service device having a plurality of rules and a plurality of metarules, ([0090], shows the end-device may include a DRE further comprising a generic "event-based" rating Engine and Generic collectors may use meta-rules to process generic events, and shows DRE can include rules and metarules, and metarules are used to process generic events, where the DRE stands for Device Based Rating Engine, which rates/bills for services, w/[0068] shows DRE implemented on user device, w/ [0170], shows that a consumer's device with a DRE and a merchant's Point of Sale (POS) system could collaborate to determine the customer's final price of items based on historical information and e-coupons stored within the consumer's device, thereby suggesting that POS must use the metarules inherently with a set of rules to process data since in order for the POS to collaborate with the end-device/DRE, metarules of the end-device/DRE must be communicate with the POS for collaboration to occur, Irwin also discloses in both [0171] and [0174] a DRE-POS collaboration, and in [0176], it is shown that the POS/DRE establishes a secure wireless connection, where a verified digitally signed token is generated between the two. Although it is shown that the user device uses these rules and meta rules, Irwin suggests that the POS also utilizes rules and metarules since the DRE securely collaborates with the POS through a verified digitally signed token in order to perform system processing); and

a portable device having a plurality of rules and a plurality of metarules/wherein the portable device and the point of service device are configured to conduct the purchase transaction using a contactless mode of operation, ([0071], The DRE may take advantage of common operating environments available on the next generation set of hand-held and wireless devices);

wherein the portable device and the point of service device use their plurality of rules plurality of rules and plurality of meta-rules to determine an outcome for a purchase transaction/ determining an outcome…, ([0090], shows the end-device may include a DRE further comprising a generic "event-based" rating Engine and Generic collectors may use meta-rules to process generic events, where metarules inherently are derived from a set of rules and events include but are not limited to content consumption events and/or transaction events as shown in [0031] where content consumption events and/or transaction events represents the purchase transaction);

wherein the outcome is a reward, ([0085], offering cross promotional or discounted offerings to subscribers with DRE enabled devices based on rated usage information acquired from DRE enabled customers, wherein this case, rated usage acquired from DRE occurs as a result of a transaction);

Irwin et al does not specifically disclose wherein if the portable device and the point of service device are unable to determine the outcome for the purchase transaction, the point of service device uses its plurality of meta-rules to either determine whether one or more of the plurality of rules in either the portable device or the point of service device can be altered locally in order to determine the outcome or request a service provider system to help determine the outcome using the plurality of rules and the plurality of meta-rules in the service provider system/wherein if the portable device and the point of service device are unable to determine the outcome for the purchase transaction, the point of service device uses its plurality of meta-rules to request the service provider system to help determine the outcome using the plurality of rules or the plurality of meta-rules in the service provider system/wherein the plurality of meta-rules in the point of service device includes a meta-rule for replacing at least one rule in the plurality of rules in the point of service device with another rule, however does disclose adding, removing, and updating rating rules in a persistent store where rules are maintained past the life span of the RatingEngine, however when the RatingEngine is started again, the rules are bootstraped by reading the persistent store of Rules, in this case, when the RatingEngine is not started (or is past its lifespan), this suggests that the outcome for the transaction can not be determined since old rules are maintained, and in order to determine rules for a transaction, the updated/bootstraped rules must apply in order to determine current transaction values as shown in [0106].

However, Durbin et al discloses that a rule message is searched to determine if any rule conditions remain unexamined or, for rules already determined true, if any rule actions remain incomplete, and if such entries are found, then local routing updater fills in the destination from the next object processor on object routing list, and a next routing counter is incremented in the rule and the rule is forwarded to next instant object, sub-object, or base object 367, as shown in col. 25, lines 44-52. Durbin et al also discloses that Rule messages 137 are passed from AP 5 to I/E 1 to determine variables or provide meta-rules to provide direction to the inference process in col. 10, lines 9-12. It therefore would have been obvious to combine the teachings of Irwin et al and Durbin et al to disclose wherein if the portable device and the point of service device are unable to determine the outcome for the purchase transaction, the point of service device uses its plurality of meta-rules to either determine whether one or more of the plurality of rules in either the portable device or the point of service device can be altered locally in order to determine the outcome or request a service provider system to help determine the outcome using the plurality of rules and the plurality of meta-rules in the service provider system/wherein if the portable device and the point of service device are unable to determine the outcome for the purchase transaction, the point of service device uses its plurality of meta-rules to request the service provider system to help determine the outcome using the plurality of rules or the plurality of meta-rules in the service provider system/wherein the plurality of meta-rules in the point of service device includes a meta-rule for replacing at least one rule in the plurality of rules in the point of service device with another rule.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to utilize meta-rules if unable to determine an outcome of a transaction with the motivation of using a set of rules that can be adjusted to accommodate for the determination of a transaction.

Neither Irwin nor Durbin disclose wherein the plurality of meta-rules in the point of service device includes a meta- rule for replacing at least one rule in the plurality of rules in the point of service device with another rule, however, Mathew et al discloses an Internet system where content sites from which transactions such as the purchase of goods or the downloading of content is possible as shown in [0376]. In Mathew et al,

[0229] shows that the user may specify that a rule not be applied if a particular type of action was specified by a previous rule, where this approach of basic rules supplemented by priority sub-rules employed in one embodiment of the WorkSpace system is an approach that can be superiorly implemented, and also in [0372] Mathew et al shows that the user may make rule specifications through the execution of such a "meta rule" that gives the user the choice. It therefore would be obvious to combine the teachings of Irwin, Durbin and Mathew et al to disclose wherein the plurality of meta-rules in the point of service device includes a meta- rule for replacing at least one rule in the plurality of rules in the point of service device with another rule.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to disclose wherein the plurality of meta-rules in the point of service device includes a meta- rule for replacing at least one rule in the plurality of rules in the point of service device with another rule with the motivation of showing that if a rule is not fit for a certain application, it may be substituted.

Neither Irwin nor Durbin nor Mathew et al specifically disclose wherein the point of service device and the portable device are configured to mutually authenticate each other prior to information exchange, however, in [0178] of Irwin, it discloses that the DRE POS authentication utility may be configured to trust the device if the token can successfully be decrypted without further validation. Although Irwin teaches that The POS establishes a level of trust with the consumer's device by sending an event to the DRE requesting identification of the device as shown in [0176], [0178] also discloses that upon successful validation by the DRE POS authentication utility, a new DRE authentication token may be generated and signed by the merchant's system and sent back to the consumer device's DRE for storage. If the centralized system is in use, these additional attributes may be updated in the centralized system in order to validate the token on the next interaction, thereby suggesting that upon the next interaction, authentication will already have taken place before the actual information exchange occurs. However, in [0167], Kinoshita et al discloses an electronic payment method where data is exchanged via Mobile terminal 17 between POS terminal 11 and Portable device 14. In this case, it is when the authentication failed, Portable device 14 notifies the user that the user is not a right person and thus rejected before carrying out error processing, for example, terminating the processing. If the authentication is completed, Portable device 14 sends the user ID stored in UIM 18 to Mobile terminal 17 by short-range wireless communication. The user ID is transferred from Mobile terminal 17 to POS terminal 11 (step S2). In addition, Portable device 14 stores the authentication result representing authenticity of the user into Storage area 233 of UIM 18, thus showing data exchange between portable device and POS only after authentication. It therefore would be obvious to one of ordinary skill in the art to combine Irwin, Durbin, Mathew et al, and Kinoshita et al to disclose wherein the point of service device and the portable device are configured to mutually authenticate each other prior to information exchange.

It would have been obvious to one of ordinary skill in the art at the time of the applicant’s invention to disclose wherein the point of service device and the portable device are configured to mutually authenticate each other prior to information exchange with the motivation of highly securing transmitting data between the point of service and portable device.

As per claims 2, 3, Irwin et al discloses:

A network gateway, ([0004], shows common to use network gateways)

having a plurality of rules and a plurality of meta rules, ([0090], shows the end-device may include a DRE further comprising a generic "event-based" rating Engine and Generic collectors may use meta-rules to process generic events, and shows DRE can include rules and metarules, and metarules are used to process generic events, where the DRE stands for Device Based Rating Engine, which rates/bills for services);

Irwin et al does not specifically disclose wherein if the portable device and the point of service device are unable to determine the outcome, the point of service device uses its plurality of meta-rules to either determine whether one or more of the plurality of rules in either the portable device or the point of service device can be altered locally in order to determine the outcome or request the network gateway to help determine the outcome using the plurality of rules and the plurality of meta-rules in the network gateway/if the outcome cannot be determined using the plurality of rules in the point of service device, using the plurality of meta-rules in the point of service device to either determine whether one or more of the plurality of rules in the point of service device can be altered locally in order to determine the outcome or request a network gateway to help determine the outcome using a plurality of rules and a plurality of meta-rules in the network gateway/wherein if the network gateway is unable to determine the outcome using its plurality of rules, the network gateway uses its associated plurality of meta-rules to either determine whether one or more of its associated plurality of rules can be altered locally in order to determine the outcome or request a second network gateway or a first service provider to help determine the outcome using the plurality of rules and the plurality of meta-rules in the service provider system, however does disclose adding, removing, and updating rating rules in a persistent store where rules are maintained past the life span of the RatingEngine, however when the RatingEngine is started again, the rules are bootstraped by reading the persistent store of Rules, in this case, when the RatingEngine is not started (or is past its lifespan), this suggests that the outcome for the transaction can not be determined since old rules are maintained, and in order to determine rules for a transaction, the updated/bootstraped rules must apply in order to determine current transaction values as shown in [0106].

However, Durbin et al discloses that a rule message is searched to determine if any rule conditions remain unexamined or, for rules already determined true, if any rule actions remain incomplete, and if such entries are found, then local routing updater fills in the destination from the next object processor on object routing list, and a next routing counter is incremented in the rule and the rule is forwarded to next instant object, sub-object, or base object 367, as shown in col. 25, lines 44-52. Durbin et al also discloses that Rule messages 137 are passed from AP 5 to I/E 1 to determine variables or provide meta-rules to provide direction to the inference process in col. 10, lines 9-12. It therefore would have been obvious to combine the teachings of Irwin et al and Durbin et al to disclose wherein if the portable device and the point of service device are unable to determine the outcome, the point of service device uses its plurality of meta-rules to either determine whether one or more of the plurality of rules in either the portable device or the point of service device can be altered locally in order to determine the outcome or request the network gateway to help determine the outcome using the plurality of rules and the plurality of meta-rules in the network gateway/if the outcome cannot be determined using the plurality of rules in the point of service device, using the plurality of meta-rules in the point of service device to either determine whether one or more of the plurality of rules in the point of service device can be altered locally in order to determine the outcome or request a network gateway to help determine the outcome using a plurality of rules and a plurality of meta-rules in the network gateway/wherein if the network gateway is unable to determine the outcome using its plurality of rules, the network gateway uses its associated plurality of meta-rules to either determine whether one or more of its associated plurality of rules can be altered locally in order to determine the outcome or request a second network gateway or a first service provider to help determine the outcome using the plurality of rules and the plurality of meta-rules in the service provider system.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to utilize meta-rules if unable to determine an outcome of a transaction with the motivation of using a set of rules that can be adjusted to accommodate for the determination of a transaction.

As per claims 4, 5, Irwin et al discloses:

wherein the point of service device uses historical purchase transaction information to update the plurality of rules and the plurality of meta-rules in the portable device in order to render processing of purchase transactions more efficient/wherein the service provider system uses historical purchase transaction information to update the plurality of rules and the plurality of meta-rules associated respectively with the portable device and the point of service device in order to render processing of purchase transactions more efficient/wherein the first node uses historical purchase transaction information to update the plurality of rules and the plurality of meta-rules in a node having a node order that is equal to or lower than that of the first noted in order to render processing of purchase transactions more efficient ,([0065], history of past occurrences).

As per claims 6, 69, Irwin et al discloses:

A service provider system including an associated plurality of rules and an associated plurality of meta-rules, ([0090], shows the end-device may include a DRE further comprising a generic "event-based" rating Engine and Generic collectors may use meta-rules to process generic events, inherently a set of rules);

a point of service device having associated therewith a plurality of rules and an associated plurality of meta-rules, ([0090], shows the end-device may include a DRE further comprising a generic "event-based" rating Engine and Generic collectors may use meta-rules to process generic events w/ [0170], shows that a consumer's device with a DRE and a merchant's Point of Sale (POS) system could collaborate to determine the customer's final price of items based on historical information and e-coupons stored within the consumer's device, thereby suggesting that POS must use the metarules inherently being a set of rules to process data since in order for the POS to collaborate with the end-device/DRE, metarules of the end-device/DRE must be communicate with the POS for collaboration to occur; and

a portable device having associated therewith a plurality of rules and an associated plurality of meta-rules, ([0071], The DRE may take advantage of common operating environments available on the next generation set of hand-held and wireless devices);

wherein the portable device and the point of service device use their associated plurality of rules plurality of rules and plurality of meta-rules to determine an outcome for a purchase transaction/ determining an outcome…, ([0090], shows the end-device may include a DRE further comprising a generic "event-based" rating Engine and Generic collectors may use meta-rules to process generic events, where metarules inherently are derived from a set of rules and events include but are not limited to content consumption events and/or transaction events as shown in [0031] where content consumption events and/or transaction events represents the purchase transaction);

wherein the outcome is a reward, ([0085], offering cross promotional or discounted offerings to subscribers with DRE enabled devices based on rated usage information acquired from DRE enabled customers, wherein this case, rated usage acquired from DRE occurs as a result of a transaction);

wherein the outcome for the transaction includes a price, ([0065], calculate a price);

and wherein the point of service device is a vending machine, ([0078], vending machine).

Irwin et al does not specifically disclose wherein if the portable device and the point of service device are unable to determine the outcome for the purchase transaction, the point of service device uses its associated plurality of meta-rules to request the service provider system to help determine the outcome using the plurality of rules and the plurality of meta-rules in the service provider system/wherein the plurality of meta-rules in the point of service device includes a meta-rule for replacing at least one rule in the plurality of rules in the point of service device with another rule, however does disclose adding, removing, and updating rating rules in a persistent store where rules are maintained past the life span of the RatingEngine, however when the RatingEngine is started again, the rules are bootstraped by reading the persistent store of Rules, in this case, when the RatingEngine is not started (or is past its lifespan), this suggests that the outcome for the transaction can not be determined since old rules are maintained, and in order to determine rules for a transaction, the updated/bootstraped rules must apply in order to determine current transaction values as shown in [0106].

However, Durbin et al discloses that a rule message is searched to determine if any rule conditions remain unexamined or, for rules already determined true, if any rule actions remain incomplete, and if such entries are found, then local routing updater fills in the destination from the next object processor on object routing list, and a next routing counter is incremented in the rule and the rule is forwarded to next instant object, sub-object, or base object 367, as shown in col. 25, lines 44-52. Durbin et al also discloses that Rule messages 137 are passed from AP 5 to I/E 1 to determine variables or provide meta-rules to provide direction to the inference process in col. 10, lines 9-12. It therefore would have been obvious to combine the teachings of Irwin et al and Durbin et al to disclose wherein if the portable device and the point of service device are unable to determine the outcome for the purchase transaction, the point of service device uses its associated plurality of meta-rules to request the service provider system to help determine the outcome using the plurality of rules and the plurality of meta-rules in the service provider system/wherein the plurality of meta-rules in the point of service device includes a meta-rule for replacing at least one rule in the plurality of rules in the point of service device with another rule.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to utilize meta-rules if unable to determine an outcome of a transaction with the motivation of using a set of rules that can be adjusted to accommodate for the determination of a transaction.

As per claim 7, Irwin et al discloses:

Wherein the system is implemented using software, hardware or a combination of both, ([0061], software, hardware).

As per claim 8, Irwin et al discloses:

wherein the portable device includes a smart card, a memory stick, a dongle, a personal digital assistant, a cellular phone and a pager, ([0064], pagers, cell phones pda's).

As per claim 9, Irwin et al discloses:

wherein the point of service device includes a personal computer, a point of sale device, a kiosk, an automatic teller machine and a cellular phone, ([0078], kiosk).

As per claims 60, 65, Irwin et al discloses:

Wherein the point of service device is a vending machine, ([0078], vending machine).

As per claim 62, 68, Irwin et al discloses all limitations as discussed with respect to claim 1, and also discloses:

Wherein the outcome is determined using a price computation process, ([0065], As a rating system, the DRE may calculate a price for some actual or potential occurrence).

wherein the point of service device is further configured to determine information including the time, temperature, weather, or geographical location, ([0066], recognition of its geographic location and the ability to consume location-based services, where as shown in claim 1, [0170] of Irwin shows that a consumer's device with a DRE and a merchant's Point of Sale (POS) system could collaborate to determine the customer's final price of items based on historical information and e-coupons stored within the consumer's device, thereby suggesting that POS must use the metarules inherently with a set of rules to process data since in order for the POS to collaborate with the end-device/DRE, metarules of the end-device/DRE must be communicate with the POS for collaboration to occur, thereby also suggesting the determination of the geographic location information by the point of service device. Irwin also discloses in both [0171] and [0174] a DRE-POS collaboration, and in [0176], it is shown that the POS/DRE establishes a secure wireless connection, where a verified digitally signed token is generated between the two. Although it is shown that the user device uses these rules and meta rules, Irwin suggests that the POS also utilizes rules and metarules since the DRE securely collaborates with the POS through a verified digitally signed token in order to perform system processing, thereby also suggesting the determination of the geographic location information by the POS)

wherein the at least one price computation rule uses service provider and data logs to determine the outcome of the transaction, ([0148] Another aspect to the DRE may include the deflection of self-care from a call center to the end device. Each subscriber may have a user interface connected to their own on-device billing and rating Engine which allows the user to query the device for information relating to their account (usage, charges, etc.). As events occur and are priced and balances are adjusted, the DRE may maintain a running log of such transactions. These logs may record various attributes of the event processing (data and time, location, etc.). These logs may be transferred to back-end systems for long-term storage and balance reconciliation. The policy for such interactions may be configurable).

Neither Irwin nor Durbin nor Mathew et al specifically disclose wherein the point of service device and the portable device are configured to mutually authenticate each other prior to information exchange, however, in [0178] of Irwin, it discloses that the

DRE POS authentication utility may be configured to trust the device if the token can successfully be decrypted without further validation. Although Irwin teaches that The POS establishes a level of trust with the consumer's device by sending an event to the DRE requesting identification of the device as shown in [0176], [0178] also discloses that upon successful validation by the DRE POS authentication utility, a new DRE authentication token may be generated and signed by the merchant's system and sent back to the consumer device's DRE for storage. If the centralized system is in use, these additional attributes may be updated in the centralized system in order to validate the token on the next interaction, thereby suggesting that upon the next interaction, authentication will already have taken place before the actual information exchange occurs. However, in [0167], Kinoshita et al discloses an electronic payment method where data is exchanged via Mobile terminal 17 between POS terminal 11 and Portable device 14. In this case, it is when the authentication failed, Portable device 14 notifies the user that the user is not a right person and thus rejected before carrying out error processing, for example, terminating the processing. If the authentication is completed, Portable device 14 sends the user ID stored in UIM 18 to Mobile terminal 17 by short-range wireless communication. The user ID is transferred from Mobile terminal 17 to POS terminal 11 (step S2). In addition, Portable device 14 stores the authentication result representing authenticity of the user into Storage area 233 of UIM 18, thus showing data exchange between portable device and POS only after authentication. It therefore would be obvious to one of ordinary skill in the art to combine Irwin, Durbin, Mathew et al, and Kinoshita et al to disclose wherein the point of service device and the portable device are configured to mutually authenticate each other prior to information exchange.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to disclose wherein the point of service device and the portable device are configured to mutually authenticate each other prior to information exchange with the motivation of highly securing transmitting data between the point of service and portable device.

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As per claims 71, 72 Irwin et al discloses:

wherein the point of service device is further configured to measure environmental information including the time, temperature, weather, or *geographical location*, ([0066], recognition of its geographic location and the ability to consume location-based services)

As per claim 76, Irwin et al discloses:

conducting a transaction between a portable device having a plurality of rules and a plurality of meta-rules and a point of service device having a plurality of rules and a plurality of meta-rules, ([0090], shows the end-device may include a DRE further comprising a generic "event-based" rating Engine and Generic collectors may use meta-rules to process generic events, and shows DRE can include rules and metarules, and metarules are used to process generic events, where the DRE stands for Device Based Rating Engine, which rates/bills for services, w/[0068] shows DRE implemented on user device, w/ [0170], shows that a consumer's device with a DRE and a merchant's Point of Sale (POS) system could collaborate to determine the customer's final price of items based on historical information and e-coupons stored within the consumer's device, thereby suggesting that POS must use the metarules inherently with a set of rules to process data since in order for the POS to collaborate with the end-device/DRE, metarules of the end-device/DRE must be communicate with the POS for collaboration to occur);

wherein the portable device and the point of service device use their plurality of rules and plurality of meta-rules to determine an outcome for a purchase transaction, ([0090], shows the end-device may include a DRE further comprising a generic "event-based" rating Engine and Generic collectors may use meta-rules to process generic events, where metarules inherently are derived from a set of rules and events include but are not limited to content consumption events and/or transaction events as shown in [0031] where content consumption events and/or transaction events represents the purchase transaction);

wherein the method further comprises: requesting, by the point of service device, the network gateway or the service provider system to help determine the outcome using the plurality of rules and the plurality of meta-rules in the network gateway or the service provider system, ([0073], shows threading that allows multiple paths of execution, e.g. simultaneous execution of event processing, network connections, etc, and an instance of the DRE handles multiple concurrent `events` or service requests, where each event can be assigned to a pre-allocated thread (from a pool) that processes the `event, where in this case the network connections are responsible for this request, where it is suggested that the network connection is through network gateway as shown in ([0004]).

wherein one or more of the rules in the portable device and the point of service device represent a consumer behavior model, ([0088] The DRE model may be particularly suited toward a prepaid model where the balance persists even when the consumer may be out of range of the network. This disconnected mode may occur by environment (inside a building, elevator, or tunnel), regulation (airplane), or choice (power-saving mode)).

wherein the point of service device is a vending machine, ([0064], vending machines).

wherein the vending machine uses inventory control and pricing methods to maximize the number of sales between service visits, ([0064] The DRE may comprise a general-purpose rating and billing Engine hosted on a wide variety of end devices which may not be specific to any industry. The DRE processes events which may include content consumption events (i.e., download or read a book, open a WebPage, check a stock portfolio, etc.) or transaction events (i.e., online purchases or other non-content-based services)--any activity capable of being measured, billed, or authorized, and is shown to be applied to vending machines, and in [0078] shows that a commercial transaction occurring via a Peer-to-Peer application networking running over WLAN connection can be between a vending machine and a PDA or a public kiosk, and in

[0163], Irwin discloses that the Central System (170) may also provide additional billing and rating functions that employ a cross-device perspective. This may allow the end provider to support price plans that take advantage of cross-product discounts, specialized loyalty arrangements, and access to shared/pooled resources such as pooled game minutes, shared volumes of downloaded content, etc. For example, in an embodiment of this functionality, a family could purchase a plan that allowed them a certain shared number of video clips per month that would be shared across all of the devices (100). As they were used, the end device (100) may reserve the content and provide the on-device billing and balance while the CRB (170) may handle the reservation and perform the end reconciliation across the devices (100). This shared perspective of the CRB (170) may also allow discounts to be provided which may be downloaded to the device (100) as a credit to the kept balance, ad finally, in [0168] Irwin shows a Peer Balance Leveling model, where the DRE instances on the devices participating in a billing arrangement could "spend" balance among themselves. The peers use a peer configured as a coordinator to maintain the master balance. The coordinating peer may be the peer that must synchronize with the central system to purchase additional units and perform sanity checks on the master balance. When the peers rendezvous with the coordinating peer, as described in the previous section, they have the opportunity to shift unused balances from one device to another based on spending patterns derived from usage events. This model allows devices with higher unused balances to be shifted to devices that consume higher amounts of units. In the previous examples, the scheme of implementing price plans to allow discounts to be provided to the end user suggests using pricing methods to maximize the number of sales since the end user must purchase a plan that allows for this type of discount. In addition, the example of purchasing additional units and shifting balances, based on spending patterns, to devices consuming higher amounts of units represents using inventory control to maximize the number of sales).

Irwin et al does not specifically disclose wherein if the portable device and the point of service device are unable to determine the outcome for the purchase transaction, the point of service device uses its associated plurality of meta-rules to request the service provider system to help determine the outcome using the plurality of rules and the plurality of meta-rules in the service provider system/wherein the plurality of meta-rules in the point of service device includes a meta-rule for replacing at least one rule in the plurality of rules in the point of service device with another rule, however does disclose adding, removing, and updating rating rules in a persistent store where rules are maintained past the life span of the RatingEngine, however when the RatingEngine is started again, the rules are bootstraped by reading the persistent store of Rules, in this case, when the RatingEngine is not started (or is past its lifespan), this suggests that the outcome for the transaction can not be determined since old rules are maintained, and in order to determine rules for a transaction, the updated/bootstraped rules must apply in order to determine current transaction values as shown in [0106].

However, Durbin et al discloses that a rule message is searched to determine if any rule conditions remain unexamined or, for rules already determined true, if any rule actions remain incomplete, and if such entries are found, then local routing updater fills in the destination from the next object processor on object routing list, and a next routing counter is incremented in the rule and the rule is forwarded to next instant object, sub-object, or base object 367, as shown in col. 25, lines 44-52. Durbin et al also discloses that Rule messages 137 are passed from AP 5 to I/E 1 to determine variables or provide meta-rules to provide direction to the inference process in col. 10, lines 9-12. It therefore would have been obvious to combine the teachings of Irwin et al and Durbin et al to disclose wherein if the portable device and the point of service device are unable to determine the outcome for the purchase transaction, the point of service device uses its associated plurality of meta-rules to request the service provider system to help determine the outcome using the plurality of rules and the plurality of meta-rules in the service provider system/wherein the plurality of meta-rules in the point of service device includes a meta-rule for replacing at least one rule in the plurality of rules in the point of service device with another rule.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to utilize meta-rules if unable to determine an outcome of a transaction with the motivation of using a set of rules that can be adjusted to accommodate for the determination of a transaction.

Neither Irwin nor Durbin nor Mathew et al specifically disclose and wherein the method further comprises mutually authenticating the portable device and the point of service device, however, in [0178] of Irwin, it discloses that the DRE POS authentication utility may be configured to trust the device if the token can successfully be decrypted without further validation. Although Irwin teaches that The POS establishes a level of trust with the consumer's device by sending an event to the DRE requesting identification of the device as shown in [0176], [0178] also discloses that upon successful validation by the DRE POS authentication utility, a new DRE authentication token may be generated and signed by the merchant's system and sent back to the consumer device's DRE for storage. If the centralized system is in use, these additional attributes may be updated in the centralized system in order to validate the token on the next interaction, thereby suggesting that upon the next interaction, authentication will already have taken place before the actual information exchange occurs. However, in [0167], Kinoshita et al discloses an electronic payment method where data is exchanged via Mobile terminal 17 between POS terminal 11 and Portable device 14. In this case, it is when the authentication failed, Portable device 14 notifies the user that the user is not a right person and thus rejected before carrying out error processing, for example, terminating the processing. If the authentication is completed, Portable device 14 sends the user ID stored in UIM 18 to Mobile terminal 17 by short-range wireless communication. The user ID is transferred from Mobile terminal 17 to POS terminal 11 (step S2). In addition, Portable device 14 stores the authentication result representing authenticity of the user into Storage area 233 of UIM 18, thus showing data exchange between portable device and POS only after authentication. It therefore would be obvious to one of ordinary skill in the art to combine Irwin, Durbin, Mathew et al, and Kinoshita et al to disclose and wherein the method further comprises mutually authenticating the portable device and the point of service device.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to disclose and wherein the method further comprises mutually authenticating the portable device and the point of service device with the motivation of highly securing transmitting data between the point of service and portable device.

As per claim 77, Irwin et al discloses:

wherein the outcome is a reward, ([0085], offering cross promotional or discounted offerings to subscribers with DRE enabled devices based on rated usage information acquired from DRE enabled customers, wherein this case, rated usage acquired from DRE occurs as a result of a transaction);

As per claim 78, Irwin et al discloses:

wherein the outcome is determined using a price computation process, ([0065], As a rating system, the DRE may calculate a price for some actual or potential occurrence, [0118] When an Event (127) may be posed to the RatingEngine (230), the rating Engine (230) evaluates the configured rating rules (314) to see which ones should be applied to the Event (125). Each Rule (314) provides a ConcreteCriteria object (312) that performs this evaluation. If the matches call (1150) on the ConcreteCriteria (312) returns "true", the associated ConcreteAction (308) may be applied to the Event (127). The ConcreteAction (308) may perform the rating and set the cost of the Event (125) directly into the Event (125). All rules that apply to the Event (127) will be processed (1160). Rules are applied in the priority order as specified during their configuration);

As per claim 79, Irwin et al does not specifically disclose wherein if the portable device and the point of service device are unable to determine the outcome, the point of service device uses its plurality of meta-rules to either determine whether one or more of the plurality of rules in either the portable device or the point of service device can be altered locally in order to determine the outcome or request the network gateway to help determine the outcome using the plurality of rules and the plurality of meta-rules in the network gateway, however does disclose adding, removing, and updating rating rules in a persistent store where rules are maintained past the life span of the RatingEngine, however when the RatingEngine is started again, the rules are bootstraped by reading the persistent store of Rules, in this case, when the RatingEngine is not started (or is past its lifespan), this suggests that the outcome for the transaction can not be determined since old rules are maintained, and in order to determine rules for a transaction, the updated/bootstraped rules must apply in order to determine current transaction values as shown in [0106].

However, Durbin et al discloses that a rule message is searched to determine if any rule conditions remain unexamined or, for rules already determined true, if any rule actions remain incomplete, and if such entries are found, then local routing updater fills in the destination from the next object processor on object routing list, and a next routing counter is incremented in the rule and the rule is forwarded to next instant object, sub-object, or base object 367, as shown in col. 25, lines 44-52. Durbin et al also discloses that Rule messages 137 are passed from AP 5 to I/E 1 to determine variables or provide meta-rules to provide direction to the inference process in col. 10, lines 9-12. It therefore would have been obvious to combine the teachings of Irwin et al and Durbin et al to disclose wherein if the portable device and the point of service device are unable to determine the outcome, the point of service device uses its plurality of meta-rules to either determine whether one or more of the plurality of rules in either the portable device or the point of service device can be altered locally in order to determine the outcome or request the network gateway to help determine the outcome using the plurality of rules and the plurality of meta-rules in the network gateway.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to utilize meta-rules if unable to determine an outcome of a transaction with the motivation of using a set of rules that can be adjusted to accommodate for the determination of a transaction.

As per claim 80, Irwin et al discloses:

wherein the point of service device is further configured to determine information including the time, temperature, weather, or geographical location ([0066], recognition of its geographic location and the ability to consume location-based services).

As per claim 82, Irwin et al does not specifically disclose wherein if the portable device and the point of service device are unable to determine the outcome, the point of service device uses its plurality of meta-rules to request the network gateway to help determine the outcome using the plurality of rules and a plurality of meta-rules in the network gateway, however does disclose adding, removing, and updating rating rules in a persistent store where rules are maintained past the life span of the RatingEngine, however when the RatingEngine is started again, the rules are bootstraped by reading the persistent store of Rules, in this case, when the RatingEngine is not started (or is past its lifespan), this suggests that the outcome for the transaction can not be determined since old rules are maintained, and in order to determine rules for a transaction, the updated/bootstraped rules must apply in order to determine current transaction values as shown in [0106].

However, Durbin et al discloses that a rule message is searched to determine if any rule conditions remain unexamined or, for rules already determined true, if any rule actions remain incomplete, and if such entries are found, then local routing updater fills in the destination from the next object processor on object routing list, and a next routing counter is incremented in the rule and the rule is forwarded to next instant object, sub-object, or base object 367, as shown in col. 25, lines 44-52. Durbin et al also discloses that Rule messages 137 are passed from AP 5 to I/E 1 to determine variables or provide meta-rules to provide direction to the inference process in col. 10, lines 9-12. It therefore would have been obvious to combine the teachings of Irwin et al and Durbin et al to disclose wherein if the portable device and the point of service device are unable to determine the outcome, the point of service device uses its plurality of meta-rules to request the network gateway to help determine the outcome using the plurality of rules and a plurality of meta-rules in the network gateway.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to utilize meta-rules if unable to determine an outcome of a transaction with the motivation of using a set of rules that can be adjusted to accommodate for the determination of a transaction.

As per claim 83, Irwin et al does not specifically disclose altering one or more of the plurality of rules in either the portable device or the point of service device after the point of service device is unable to determine the outcome, however does disclose adding, removing, and updating rating rules in a persistent store where rules are maintained past the life span of the RatingEngine, however when the RatingEngine is started again, the rules are bootstraped by reading the persistent store of Rules, in this case, when the RatingEngine is not started (or is past its lifespan), this suggests that the outcome for the transaction can not be determined since old rules are maintained, and in order to determine rules for a transaction, the updated/bootstraped rules must apply in order to determine current transaction values as shown in [0106].

However, Durbin et al discloses that a rule message is searched to determine if any rule conditions remain unexamined or, for rules already determined true, if any rule actions remain incomplete, and if such entries are found, then local routing updater fills in the destination from the next object processor on object routing list, and a next routing counter is incremented in the rule and the rule is forwarded to next instant object, sub-object, or base object 367, as shown in col. 25, lines 44-52. Durbin et al also discloses that Rule messages 137 are passed from AP 5 to I/E 1 to determine variables or provide meta-rules to provide direction to the inference process in col. 10, lines 9-12. It therefore would have been obvious to combine the teachings of Irwin et al and Durbin et al to disclose altering one or more of the plurality of rules in either the portable device or the point of service device after the point of service device is unable to determine the outcome.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to utilize meta-rules if unable to determine an outcome of a transaction with the motivation of using a set of rules that can be adjusted to accommodate for the determination of a transaction.

As per claim 87, neither Irwin et al nor Durbin et al disclose wherein the at least one price computation rule uses value setting data to determine the outcome of the transaction, however, Mathew et al discloses variables in the action part of the rule are set to specific values (i.e., in the set or not in the set). These values eventually translate to some actual actions in terms of the disposition of a message or document as defined by action rules in [0261]. It therefore would be obvious to combine the teachings of Irwin et al, Durbin et al and Mathew et al to disclose wherein the at least one price computation rule uses value setting data to determine the outcome of the transaction.

It would have been obvious to combine the teachings of Irwin et al and Durbin et al to disclose wherein the at least one price computation rule uses value setting data to determine the outcome of the transaction with the motivation of showing that values are set in order to determine a specific outcome.

As per claims 88, 89, Irwin et al discloses:

wherein the point of sale device is configured to acquire time of day, ([0065], As a rating system, the DRE may calculate a price for some actual or potential occurrence by considering factors such as the date and time of an occurrence, length of time of an occurrence).

Irwin et al nor Durbin et al disclose acquiring the temperature data during the transaction, however, Mathew et al discloses that for any temperature, we may assume a value indicating the level of certainty that this temperature is pleasant. Instead of performing deduction based on the absolute certainty that temperatures are either pleasant or non-pleasant, fuzzy logic uses these real number values of certainty in logical deductions involving rules in [0301]. It therefore would be obvious to combine the teachings of Irwin et al, Durbin et al and Mathew et al to disclose acquiring the temperature data during the transaction.

It would have been obvious to combine the teachings of Irwin et al and Durbin et al to disclose acquiring the temperature data during the transaction with the motivation of showing that temperature values can be incorporated into rules for determining an outcome.

As per claim 90, Irwin discloses:

further comprising providing an offer to a user of the portable device, ([0064], The end device may comprise any device capable of hosting content or offering a meterable service, and [0085], shows that enterprises (1460) may choose to offer cross promotional or discounted offerings to subscribers (1410) with DRE (110) enabled devices (100) based on rated usage (1820) information acquired from DRE (110) enabled customers).

As per claim 95, neither Irwin et al nor Durbin et al nor Mathew et al disclose wherein the information includes a transaction number, however, Kinoshita et al discloses in [0198] that a Transaction number is transmitted from Payment gateway 15 to POS terminal 11, in response to the request (step S4 in FIG. 11). Upon receipt of the transaction number from Payment gateway 15, Control unit 710 stores the received transition number in relation with the transaction information stored in POS terminal earlier. It therefore would be obvious to combine the teachings of Irwin et al, Durbin et, Mathew et al and Kinoshita et al to disclose wherein the information includes a transaction number.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to disclose wherein the information includes a transaction number with the motivation of showing that the transaction number is needed to conduct a purchase transaction.

As per claim 96, Irwin discloses

wherein the information further includes a transaction cryptogram, ([0133], The Encryption service (725) provides cryptography services. The Key Management service (730) provides a secure store for public and private cryptographic keys).

As per claim 97, Irwin discloses:

wherein the point of service device comprises a service log, ([0152] All rating transactions are logged by DRE (110) into a Journal (1550) that may be used by the DRE self-care interface. The DRE journal (110) can be used by customers (1410) to review content and service usage. The users may also use the journal to log charge disputes. The DRE (110) will forward any dispute onto the appropriate peer for dispute resolution).

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As per claim 98, Irwin discloses:

a point of service device having a plurality of rules and a plurality of meta-rules, ([0090], shows the end-device may include a DRE further comprising a generic "event-based" rating Engine and Generic collectors may use meta-rules to process generic events, and shows DRE can include rules and metarules, and metarules are used to process generic events, where the DRE stands for Device Based Rating Engine, which rates/bills for services, w/[0068] shows DRE implemented on user device, w/ [0170], shows that a consumer's device with a DRE and a merchant's Point of Sale (POS) system could collaborate to determine the customer's final price of items based on historical information and e-coupons stored within the consumer's device, thereby suggesting that POS must use the metarules inherently with a set of rules to process data since in order for the POS to collaborate with the end-device/DRE, metarules of the end-device/DRE must be communicate with the POS for collaboration to occur, Irwin also discloses in both [0171] and [0174] a DRE-POS collaboration, and in [0176], it is shown that the POS/DRE establishes a secure wireless connection, where a verified digitally signed token is generated between the two. Although it is shown that the user device uses these rules and meta rules, Irwin suggests that the POS also utilizes rules and metarules since the DRE securely collaborates with the POS through a verified digitally signed token in order to perform system processing); and

a portable device having a plurality of rules and a plurality of meta-rules, ([0071], The DRE may take advantage of common operating environments available on the next generation set of hand-held and wireless devices);

wherein the portable device and the point of service device use their plurality of rules and plurality of meta-rules to determine an outcome for a purchase transaction, ([0090], shows the end-device may include a DRE further comprising a generic "event-based" rating Engine and Generic collectors may use meta-rules to process generic events, where metarules inherently are derived from a set of rules and events include but are not limited to content consumption events and/or transaction events as shown in [0031] where content consumption events and/or transaction events represents the purchase transaction);

wherein the plurality of rules includes at least one price computation rule, ([0065], As a rating system, the DRE may calculate a price for some actual or potential occurrence, [0118] When an Event (127) may be posed to the RatingEngine (230), the rating Engine (230) evaluates the configured rating rules (314) to see which ones should be applied to the Event (125). Each Rule (314) provides a ConcreteCriteria object (312) that performs this evaluation. If the matches call (1150) on the ConcreteCriteria (312) returns "true", the associated ConcreteAction (308) may be applied to the Event (127). The ConcreteAction (308) may perform the rating and set the cost of the Event (125) directly into the Event (125). All rules that apply to the Event (127) will be processed (1160). Rules are applied in the priority order as specified during their configuration); and

wherein the point of service device is further configured to determine information including the time, temperature, weather, or geographical location, ([0066], recognition of its geographic location and the ability to consume location-based services, [0148], shows that each subscriber may have a user interface connected to their own on-device billing and rating Engine which allows the user to query the device for information relating to their account (usage, charges, etc.), and as events occur and are priced and balances are adjusted, the DRE may maintain a running log of such transactions, where these logs may record various attributes of the event processing (date and time, location, etc.), and may be transferred to back-end systems for long-term storage and balance reconciliation);

wherein the at least one price computation rule uses desired system performance to determine the outcome of the transaction, ([0006] Four key trends are shaping the computerized billing industry: increased processing power on user devices, longer lasting batteries for user devices, standardization of the development and operating environment on the user device (standard operating systems), and finally the demand and growth of applications executing on the user device. End devices are rapidly moving from simple, proprietary, single purpose devices to full-fledged mobile application deployment platforms. The devices are also merging as personal digital assistants become wireless enabled and cell phones extend to become personal information management devices. These advancements include several dimensions: CPUs, memory, networking, graphical displays and operating systems, [0070] shows implementation of the paradigm shift from the old "server-centric model" to a "distributed model" in which the end devices control the processing of events/transactions and the consumption of content. *This improves traffic flow over the network* because unnecessary traffic is not created by a centralized rating and billing system to update rules/algorithms/tables when such may not be utilized by the end device. In one embodiment, since the device handles rating, there isn't any need to handle all of the usage/authorization records that are moved around the network today. Furthermore, *bandwidth may not be utilized for fruitless, automated polling queries* by the centralized rating and billing system--the device may simply upload records when such records exist or a predetermined amount of records has been accumulated. Finally, the end device may *choose the most appropriate time (through analysis of its current processing power consumption and/or analysis of current network throughput) to upload events to the centralized rating and billing system to achieve the most efficient transfer possible*).

Irwin et al does not specifically disclose wherein if the portable device and the point of service device are unable to determine the outcome for the purchase transaction, the point of service device uses its plurality of meta-rules to either determine whether one or more of the plurality of rules in either the portable device or the point of service device can be altered locally in order to determine the outcome or request a service provider system to help determine the outcome using the plurality of rules and the plurality of meta-rules in the service provider system, however does disclose adding, removing, and updating rating rules in a persistent store where rules are maintained past the life span of the RatingEngine, however when the RatingEngine is started again, the rules are bootstraped by reading the persistent store of Rules, in this case, when the RatingEngine is not started (or is past its lifespan), this suggests that the outcome for the transaction can not be determined since old rules are maintained, and in order to determine rules for a transaction, the updated/bootstraped rules must apply in order to determine current transaction values as shown in [0106].

However, Durbin et al discloses that a rule message is searched to determine if any rule conditions remain unexamined or, for rules already determined true, if any rule actions remain incomplete, and if such entries are found, then local routing updater fills in the destination from the next object processor on object routing list, and a next routing counter is incremented in the rule and the rule is forwarded to next instant object, sub-object, or base object 367, as shown in col. 25, lines 44-52. Durbin et al also discloses that Rule messages 137 are passed from AP 5 to I/E 1 to determine variables or provide meta-rules to provide direction to the inference process in col. 10, lines 9-12. It therefore would have been obvious to combine the teachings of Irwin et al and Durbin et al to disclose wherein if the portable device and the point of service device are unable to determine the outcome for the purchase transaction, the point of service device uses its plurality of meta-rules to either determine whether one or more of the plurality of rules in either the portable device or the point of service device can be altered locally in order to determine the outcome or request a service provider system to help determine the outcome using the plurality of rules and the plurality of meta-rules in the service provider system.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to utilize meta-rules if unable to determine an outcome of a transaction with the motivation of using a set of rules that can be adjusted to accommodate for the determination of a transaction.

Neither Irwin nor Durbin nor Mathew et al specifically disclose wherein the point of service device and the portable device are configured to mutually authenticate each other prior to information exchange, however, in [0178] of Irwin, it discloses that the DRE POS authentication utility may be configured to trust the device if the token can successfully be decrypted without further validation. Although Irwin teaches that The POS establishes a level of trust with the consumer's device by sending an event to the DRE requesting identification of the device as shown in [0176], [0178] also discloses that upon successful validation by the DRE POS authentication utility, a new DRE authentication token may be generated and signed by the merchant's system and sent back to the consumer device's DRE for storage. If the centralized system is in use, these additional attributes may be updated in the centralized system in order to validate the token on the next interaction, thereby suggesting that upon the next interaction, authentication will already have taken place before the actual information exchange occurs. However, in [0167], Kinoshita et al discloses an electronic payment method where data is exchanged via Mobile terminal 17 between POS terminal 11 and Portable device 14. In this case, it is when the authentication failed, Portable device 14 notifies the user that the user is not a right person and thus rejected before carrying out error processing, for example, terminating the processing. If the authentication is completed, Portable device 14 sends the user ID stored in UIM 18 to Mobile terminal 17 by short-range wireless communication. The user ID is transferred from Mobile terminal 17 to POS terminal 11 (step S2). In addition, Portable device 14 stores the authentication result representing authenticity of the user into Storage area 233 of UIM 18, thus showing data exchange between portable device and POS only after authentication. It therefore would be obvious to one of ordinary skill in the art to combine Irwin, Durbin, Mathew et al, and Kinoshita et al to disclose wherein the point of service device and the portable device are configured to mutually authenticate each other prior to information exchange.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to disclose wherein the point of service device and the portable device are configured to mutually authenticate each other prior to information exchange with the motivation of highly securing transmitting data between the point of service and portable device.

4. Claims 70, 81, are rejected under 35 U.S.C. 103(a) as being unpatentable over Irwin et al (US 2003/0187794 A1), and further in view of Durbin et al (US 4,970,658), and further in view of Mathew et al (US 2005/0172033 A1), and further in view of Kinoshita et al (US 2003/0055792 A1), and further in view of Fare et al, (US 2004/0204078 A1).

As per claims 70, 81, neither Irwin et al nor Durbin et al nor Mathew et al nor Kinoshita et al disclose wherein the point of service device is a phone, but Irwin et al does disclose a pos system in [0170], and discloses the use of pagers, cell phones pda's in [0064].

However, Fare et al discloses a self-service system and method of loading an executable transaction application program from a self-service terminal, (where a point of service terminal can also be incorporated as shown in [0039]) to a portable electronic device comprising:

wherein the point of service device is a phone, ([0039], shows POS terminal can be used with Bluetooth technology, and therefore obvious to use a phone). Fare et al discloses this limitation in an analogous art for the purpose of showing that Bluetooth devices such as wireless phones can be used with his system.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention for the point of service device to be a phone with the motivation of allowing a user to use a phone to complete the transaction.

Response to Arguments

5. Applicant's arguments filed 4/12/10 have been fully considered but they are not persuasive.

As per claim 1, applicant makes the same argument as shown in arguments filed 4/12/10, and argues that prior art fails to disclose or suggest "a point of service device having a plurality of rules and a plurality of meta-rules". Applicant argues that metarules are only disclosed by Irwin in a user device, not a point of service device and argues that although Durbin et al. does mention "meta-rules" at column 10, line 11, Durbin et al. describes the use of "meta-rules" in a "single processor configuration" in a field and end use that is totally different than what is described in Irwin et al. Applicant argues that in claim 1, there are "two" devices which contain a plurality of rules and meta-rules and that even though there is "collaboration" between a user device and a POS terminal in *Irwin,* there is still only one device, the user device, which contains rules and meta-rules. However, examiner maintains her argument. Irwin discloses that the consumer device (DRE) and a merchant's POS can collaborate to determine the customer's final price, and that they act as peers in doing so as shown in [0170]. In addition,, both [0171] and [0174] of Irwin shows a DRE-POS collaboration, and in [0176], it is shown that the POS/DRE establishes a secure wireless connection, where a verified digitally signed token is generated between the two. Although it is shown that the user device uses these rules and meta rules, the POS also utilizing rules and metarules is suggested by Irwin *since the DRE securely collaborates with the POS* through a verified digitally signed token *in order to perform system processing*, and therefore, it is obvious that once this collaboration occurs, rules and metarules are applied collaboratively (at both DRE and the POS) in order to successfully perform processing.

In addition, applicant suggests that the Examiner respond to Applicants arguments that "Irwin et al. clearly teaches away from having a plurality of rules and meta-rules in a POS terminal, "which were presented in pages 12-13 the Response filed April 12, 2010. Applicant specifically argues that "the DRE (device based rating engine) in *Irwin* and any associated meta-rules must be based on an end device such as a hand held or wireless device in order to take advantage of the end device's ability to process data (see *Irwin,* e.g., paragraphs [0034] and [0071]). Providing such rules in a POS terminal would have no benefit or impact on *Irwin's* proposed device based rating engine, which is supposed to determine the usage of content on an end user device. Clearly, a point of sale device is not the type of device that uses *Irwin's* DRE or meta-rules. Because of this, the alleged reason to combine *Irwin* and *Durbin* is not only insufficient, the disclosure *of Irwin* actually teaches away from the modification proposed by the Examiner". However, in Irwin, the following is disclosed in [0170]: "A consumer's device with a DRE and a merchant's Point of Sale (POS) system could collaborate to determine the customer's final price of items based on historical information and e-coupons stored within the consumer's device. In this case, the DRE and POS system act as peers to perform real-time rating and discounting of items the consumer may be purchasing". Therefore, the metarules associated with the DRE is not only based on the user device, but are also based on the merchant's Point of Sale since these two must collaborate to determine information. Irwin et al therefore does not teach away from having a plurality of rules and meta-rules in a POS terminal, but rather this feature is obvious with Irwin.

As per claim 1, applicant also makes the same argument as shown in arguments filed 4/12/10. Applicant also argues that Irwin et al. and Durbin et al. also fail to teach or suggest "wherein if the portable device and the point of service device are unable to determine the outcome for the purchase transaction, the point of service device uses its plurality of meta-rules to either determine whether one or more of the plurality of rules in either the portable device or the point of service device can be altered locally in order to determine the outcome or request a service provider system to help determine the outcome using the plurality of rules and the plurality of meta-rules in the service provider system". While the Applicants do not disagree that *Durbin* may describe rule messages that are "searched," searching a rule message is cannot be equated with the features of "wherein if the portable device and the point of service device are unable to determine the outcome for the purchase transaction, the point of service device uses its plurality of meta-rules to either determine whether one or more of the plurality of rules in either the portable device or the point of service device can be altered locally in order to determine the outcome or request a service provider system to help determine the outcome using the plurality of rules and the plurality of meta-rules in the service provider system." However, examiner still maintains her argument. As disclosed above in the rejection, Durbin et al discloses that a rule message is searched to determine if any rule conditions remain unexamined or, for rules already determined true, if any rule actions remain incomplete, and if such entries are found, then local routing updater fills in the destination from the next object processor on object routing list, and a next routing counter is incremented in the rule and the rule is forwarded to next instant object, sub-object, or base object 367, as shown in col. 25, lines 44-52. Durbin et al also discloses that Rule messages 137 are passed from AP 5 to I/E 1 to determine variables or provide meta-rules to provide direction to the inference process in col. 10, lines 9-12, thereby suggesting that meta-rules can also be searched since they make up the rules that are searched. In this case, examiner interprets that if any rule conditions remain unexamined, then the portable device and the point of service device are unable to determine the outcome for the purchase transaction, and a next routing counter being incremented in the rule represents the rule being altered locally. In combination with Irwin, "wherein if the portable device and the point of service device are unable to determine the outcome for the purchase transaction, the point of service device uses its plurality of meta-rules to either determine whether one or more of the plurality of rules in either the portable device or the point of service device can be altered locally in order to determine the outcome or request a service provider system to help determine the outcome using the plurality of rules and the plurality of meta-rules in the service provider system." is disclosed since rule messages are searched in order to implement any type of processing.

Applicant further argues that Neither Irwin et al., Durbin et al., Mathew et al. nor Kinoshita et al. discloses or suggests a method or system including, inter alia, "wherein the at least one price computation rule uses service provider and data logs to determine the outcome of the transaction" as recited in independent claims 68 and 98. However, as now shown above in the office action, in [0148] of Irwin, the following is disclosed: “Another aspect to the DRE may include the deflection of self-care from a call center to the end device. Each subscriber may have a user interface connected to their own on-device billing and rating Engine which allows the user to query the device for information relating to their account (usage, charges, etc.). As events occur and are priced and balances are adjusted, the DRE may maintain a running log of such transactions. These logs may record various attributes of the event processing (data and time, location, etc.). These logs may be transferred to back-end systems for long-term storage and balance reconciliation. The policy for such interactions may be configurable”. In this case, since logs are used for balance reconciliation, this suggests "wherein the at least one price computation rule uses service provider and data logs to determine the outcome of the transaction".

Applicant further argues that neither Irwin, Durbin, Mathew, nor Kinoshita discloses or suggests a method or system including, inter alia, "...wherein one or more of the rules in the portable device and the point of service device represent a consumer behavior model, wherein the point of service device is a vending machine, wherein the vending machine uses inventory control and pricing methods to maximize the number of sales between service visits" as recited in independent claim 76. However, as shown above in the rejection, examiner has further clarified that Irwin does disclose all of these features. Specifically, in [0088] where Irwin discloses that "The DRE model may be particularly suited toward a prepaid model where the balance persists even when the consumer may be out of range of the network. This disconnected mode may occur by environment (inside a building, elevator, or tunnel), regulation (airplane), or choice (power-saving mode)", the range activity by the consumer represents consumer behavior model, and the balance persisting through range conditions suggests implementation of a rule. In addition, in [0064] of Irwin, , that vending machines can be implemented with end-user devices. This suggests wherein the point of service device is a vending machine since as shown in preceding paragraphs, there is a end-user device-POS collaboration, thereby making it obvious for vending machine processing on both end-user device and POS. Finally, [0064] and [0078] discloses the scheme of implementing price plans to allow discounts to be provided to the end user which suggests using pricing methods to maximize the number of sales since the end user must purchase a plan that allows for this type of discount. In addition, [0163] discloses the example of purchasing additional units and shifting balances, based on spending patterns, to devices consuming higher amounts of units, which represents using inventory control to maximize the number of sales.

Applicant further makes the same argument about obviousness as shown in arguments filed 4/12/10. Applicant also argues that obviousness has not been established, because the reason to combine the cited references is insufficient to establish obviousness. Examiner still maintains her argument that KSR forecloses

Appellant’s argument that a specific teaching is required for a finding of obviousness. KSR, 127 S.Ct. at 1741, 82 USPQ2d at 1396. The present claims recited combinations which only unite old elements with no change in their respective functions and which yield predictable results. Thus, the claimed subject matter likely would have been obvious under KSR. In addition *the "motivation" to combine the references not only* relates to "using a set of rules that can be adjusted to accommodate for the determination of a transaction" , however, also relates to the implementation of rules to handle transactions, where billing and payment for purchases are included in transactional processing.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Akiba K Robinson-Boyce whose telephone number is 571-272-6734. The examiner can normally be reached on Monday-Friday 9am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Hayes can be reached on 571-272-6708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the •Patent Application Information Retrieval (PAIR) system, Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

A. R. B.
October 6, 2010

/Akiba K Robinson-Boyce/
Primary Examiner, Art Unit 3628